

Supplemental materials

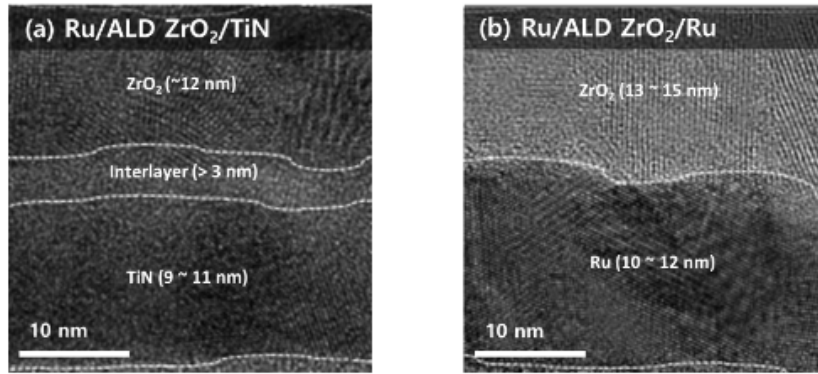


Figure 1. Cross-sectional TEM images of (a) Ru/ZrO₂/TiN and (b) Ru/ZrO₂/Ru structures.

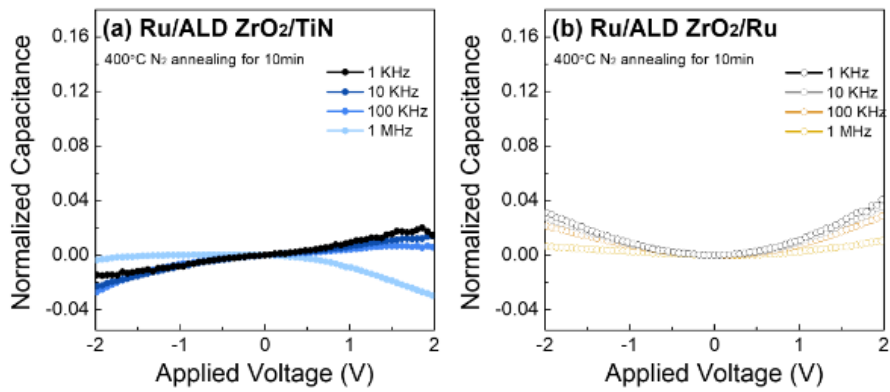


Figure 2. Normalized C-V curves of MIM capacitors using 10nm-thick ALD ZrO₂ on (a) TiN and (b) Ru.

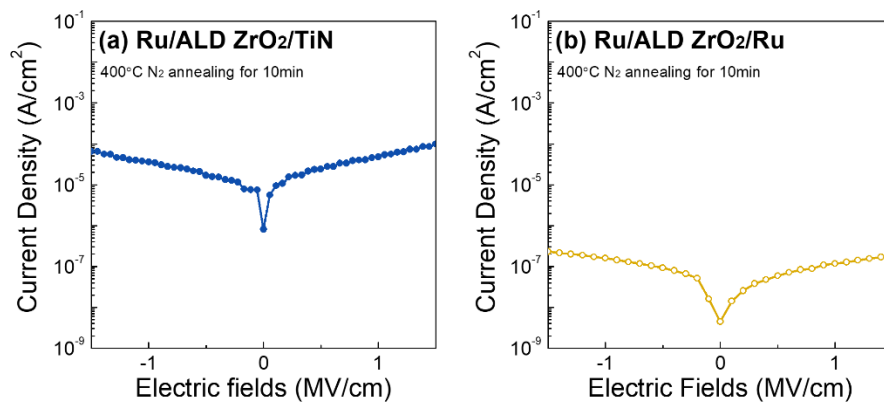


Figure 3. I-V curves of MIM capacitors using 10nm-thick ALD ZrO₂ on (a) TiN and (b) Ru.